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Bibliography on the Biology of the Fleece

FOREWORD

ONE of the main functions of the Imperial Agricultural Bureaux is "to collect, collate and disseminate among research workers in the Empire, information of a scientific and technical character." One of the forms which this takes is the compilation of bibliographies on subjects of interest to workers in the various branches of agricultural science. The present bibliography of papers dealing with the biological aspects of the study of the fleece of the sheep was prepared by the Imperial Bureau of Animal Genetics, Edinburgh, for the Imperial Wool Conference, 1930, and does not contain any references later than 1929. It was originally intended to form one part in a series of three (the other two dealing respectively with nutrition and technology of wool research), and this fact will explain many of its obvious gaps and apparent inconsistencies. It is issued in the hope that, even in its present limited form, it may be of service to those workers engaged in wool research. Should this first attempt prove to serve a useful purpose, a supplementary list may be issued at a later date.

Owing to the fact that the great majority of papers were not available at the time of compilation, it was not intended at first to prepare an index. It was felt, however, that even an imperfect index would be better than none at all; consequently an index has been compiled, for which the title of the paper was taken as a basis. It is unfortunately all too frequent, and perhaps particularly so in the case of foreign papers, that the title gives only a very remote indication of the subject, or subjects, with which a paper is dealing. For greater convenience most of the entries in the index have been grouped under the following main heading: Breeds, Countries, Fleece Characters, Flock Analysis, Genetics, Microscopic Structure, Physiology.

Grateful acknowledgement is made of the assistance rendered by Mr R. H. Burns, Assistant Wool Specialist, University of Wyoming, U.S.A., whose wide knowledge of the literature and generosity in giving largely of his time and help, have proved invaluable in the course of preparation of this Bibliography.



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INDEX OF SUBJECTS

- Angora**—Duerden & Spencer, 1927; Lush & Jones, 1924; Wucherer
- Breeding.** See **Genetics**
- Breeds**—Barker, 1927; Burns, 1927; Lonsdale; Thilo, H., 1920; Wallace, 1912; Zorn; 1919.
- Fat-tail* [and *rump*]*—*Adametz, 1912, 1917, no date; Boyd; Davy; Ivanov, 1928; Möller
- Blackface*—A. Barker, 1922; Crew & Blyth, 1922; Blyth, 1923
- Cheviot*—Malden
- Columbia*—Hill, 1921 [1927]
- Corriedale*—Lotsy; Marshall, 1916; Nichols
- Cotswold*—Becker
- Dorset*—Darlow & Craft
- East Friesian Milch*—Middeldorf; Siemens
- East Prussian Blackhead Land*—Artmann; Heyne, 1927; Kirsch, 1927, 1929; Opetz, 1927; Smelkus; Völtz & Jantzon
- Finnish*—Tänzer, 1927
- German*—Miner
- Half-bred*—Cook, 1921; Ivanov, 1928; Nichols, 1925; Spöttel, 1923
- Hampshire*—Belehov; Behlov & Reinbot; Hammond *et al.*; Heidenreich; Meyer; Vaughan, Joseph & Vinke, 1927; Wessler
- Heideschnucke*—Stieger; Sturm, 1925; Wiswesser
- Karakul*—Adametz, 1911, 1912, 1917, 1927; Bilek, 1926, 1927; Bobbert; Duck; Frölich, 1928; Heidenreich; Jahn; Kereszturi; Koepfel; Kühler; Lee; Lossen; Macha; Marchlewski, 1928, 1929; Marshall *et al.*; Mehnert; Meiss; Middeldorf; Ministerio de Agricultura; Nivoc, 1925; O'Brien; Perepelkin; Pfeifer; Pietsch; Rodiczky; Schadow; Shurman; Sinizin; Tänzer, 1925, 1927, 1928; Wahl [no date], 1920; Wallace, 1915, 1916; Young, 1914, 1922
- Kentucky Mountain*—Hörlicher & Good
- Leicester*—Spöttel, 1923; Spöttel & Tänzer; Vornekahl
- Lein*—Preisling
- Lincoln*—Ivanov & Behlov; Kuleshov & Vassiliev
- Mele*—Artmann; Baur & Kronacher, 1919; Kronacher, 1925; Kronacher & Schäper, 1926; Lilienthal, 1921; Spöttel, 1923, 1925; Spöttel & Tänzer, 1922; Terho; Thilo, E. & D.; Thilo, H., 1914, 1922; Völtz, 1921
- Merino*—Belehov, 1928; Burns, 1929; Daum; Davy; Dimitriadis; Duerden, 1926; Duerden *et al.*; Elbe, 1925; Falck & Golf, 1922, 1926; Kuleshov & Vassiliev; Marshall, 1920; Podoba; Reimers & Swart; Rink; Rozanov; Schadow; Thilo, E. & D.; Tomhave & McDonald; Völtz, 1921, 1922; Warwick & Bell; Zavadovsky
- Merino, Dishley*—Osske, Schönfeld
- Merino, Mutton*—Altenkirch; Amschler; Bautzmann; Böttel; Dippe; Findeisen; Frühauf; Gantzer; Gärtner & Volkmann; Heise; Heydenreich; Kirsch, 1929; Kliesch; Kronacher, 1924; Maurer; Meuderscheid; Nordmeyer; Ohly; Paalzow; Pank; Scholz; Smelkus; Thiemann; Volkmann; Völtz & Jantzon; Wetzer; Zeissner; Zuntzig
- Merino, Mutton-and-Wool*—Berndt, 1925; Falck & Golf, 1922, 1926; Heinchen; Schönfeld; Schulte
- Merino, Negretti*—Klein & Sticker
- Merino, Rambouillet*—Adametz, 1917; Aima & Purlevsky; Amschler; Burns, 1929; Darlow & Craft; Hilsont; Hultz; Rozanov; Spencer; Spencer *et al.*; Texas Agric. Exp. Sta.; U.S. Sheep Exp. Sta., 1925, 1926; Vaughan, Joseph & Vinke, 1927
- Oxford Down*—Birnbach
- Piebald*—Noble; Roberts, 1926
- Pomeranian*—Gaede
- Primitive*—Blyth, 1923; Crew, 1921; Crew & Blyth, 1923; Elwes, 1912, 1913; Ewart, 1913, 1914, 1919; Koepferr; Nassonov; Sanderson
- Rhon*—Linnenkohl; Meiss; Tänzer, 1927
- Romanov*—Davydov *et al.*; Voshchinsky, 1925; Voshchinsky & Briantzev
- Romney*—Malden; Wilson, J. F., 1929
- Shropshire*—Behlov, Behlov & Reinbot; Richter; Wilsdorf, 1927

- Skudde*. See *East Prussian*
Sollava—Ogrizek, 1926
Somali—Güldenpfennig
Stein—Führer
Suffolk—Nichols, 1927
Turkan—Teodoreanu
Welsh Mountain—Roberts, 1924, 1926
Wensleydale—Dry, 1924, 1926, 1927
Württemberg—Amschler; Friedrich; Kirsch, 1927, 1929; Mager; Mansfeld; Scholz
Zackel—Kereszturi; Richter; Rodiczky; Tänzer & Spötzel
Zigaya—Cecalov; Constantinescu & Contescu, 1928; Odaisky; Schmidts; Teodoreanu; Ulmanský
- Castration.** See under **Physiology**
Climate. See under **Ecology**
- Colour**—Adametz; Bessel; Dawley; Dry, 1924, 1926, 1927; Duck, 1922, 1922; Heller; Ivanov, 1924, 1928; Nichols, 1927; Noble, Roberts, 1924, 1926, 1927, 1928; Roberts & Jenkin; Roberts & Crew; Vassin; Wahl [no date]; Warwick & Bell; Wood, 1905-06, 1908-10; Wriedt, 1924; Zavadovsky
- Conformation**—Böttel; Elbe, 1925; Gärtner, 1924; Joseph, 1928; Preising; Schmidt; Scupin; Siemens; Wessler
- Countries**—
Algeria—Pardubsky; Wilson, F., & Vinson
Argentina—Ministerio de Agricultura
Australia—Bailey; Barker, 1924; Barkley; Hawkesworth; Marston & Robertson
Bokhara—Adametz, 1911, 1912, 1927. [No date]
Brazil—Anonymous, 1919
Britain—Barker, A., 1922, 1924; Bliss; Blyth, 1923 and 1926; British Research Association; Crew; Dry; Elwes; Ewart; Hobday; Kenningham; Koepfer; Lonsdale; Malden; Marshall, F. H. A. *et al*; Nichols; Noble; Roberts; Roberts *et al*; Wallace; Whyte; Wood; Youatt
Bulgaria—Petroff
Canada—O'Brien; Reed, 1923, 1925
Czechoslovakia—Bilek; Macalik; Macha
Finland—Tänzer, 1927
France—Balozet; Hilsont; Runge; Velu & Balozet; Voronoff
Germany and Austria—Adametz, 1927; Altenkirch; Amschler; Artmann; Baur & Kronacher; Bautzmann; Becker; Berndt; Birnbach; Bobbert; Böttel; Buller; Daum; Demel; Dinkhauser; Dippe; Ebbinghaus; Elbe; Falck; Falck & Golf; Findeisen; Friedrich; Frölich; Fruhauf; Führer; Gaede; Gantzer; Gärtner & Volkmann; Gehrke; Golf; Güldenpfennig; Heidenreich; Heinchen; Heise; Helldorf; Henseler; Herre; Heuer; Heydenreich; Heymons *et al*; Heyne; Hink; Hoffman; Hosang; Jahn; Kirsch; Klein; Kleine-Sticker; Kliesch; Knoblich; Kronacher; Kronacher *et al*; Kühler; Lehmann; Lilienthal; Lohner; Mager; Mansfeld; Mark; Maurer; May; Meiner; Meiss; Meuderscheid; Meyer; Middeldorf; Miner; Möller; Nachtsheim; Nathusius; Neumann; Nordmeyer; Opetz; Osske; Paalzow; Pank; Pieritz; Preising; Probst; Reichel; Richter; Rink; Rodiczky; Saxinger; Shadow; Schlange; Schleitzer; Schmidt; Scholz; Schönfeld; Schulte; Schultz; Scupin; Siemens; Sellentin; Smelkus; Spötzel; Spötzel & Tänzer; Stieger; Sturm; Tänzer; Tänzer & Spötzel; Telschow; Terho; Thieman; Thilo, H. L.; Thilo, E. & D.; Vetter; Volkmann; Völtz; Völtz & Jantzon; Vornekahl; Walther; Weiler; Wessler; Wetzer; Wilsdorf; Wiswesser; Wolff; Wucherer; Zeissner; Zollikofer; Zorn; Zorn & Gärtner; Zuntz; Zwanzig
- Hungary*—Kereszturi
Italy—Agnoletti; Alfonso; Galbusera; Pazzini; Pucci
Madagascar—Corougeen
Mongolia—Sampilon
New Zealand—Cook, Lotsy
Norway—Wriedt
Persia—Davy
Peru—Barker, A., 1927
Poland—Marchlewski
Roumania—Constantinescu & Contescu; Dimitriadis; Odaisky; Schmidts; Teodoreanu; Ulmanský
Russia—Aima & Purlevsky; Belehov; Belehov & Reinbot; Davydov *et al*; Dylkin; Ivanov; Ivanov & Belehov; Kuleshov & Vassiliev; Nassonov; Perepelkin; Podoba; Polovzova; Rozanov; Sinizin; Vassin; Voshchinsky; Voshchinsky & Briantzev; Zavadovsky
S. Africa—Barker, A., 1929; Boyd; Heerden; Koepfel; Lee; Lossen; Mehnert; Pietsch; Reimers & Swart; Shurman; Wahl
Tripoli—Casseli
Tunis—Wilson, F. & Vinson
Turkey—Hüssein
U.S.A.—Anonymous, 1919, 1927; Arkell; Burns; Carlyle & McConnel; Darlow; Darlow & Craft; Davenport; Davenport & Ritzman; Davy; Dawley; Duck; Elliot;

- Hackedorn & Sotola; Hammond *et al.*; Hardy; Hardy & Tennyson; Hausman; Heller; Hill; Hill & Dadisman; Horlacher; Horlacher & Good; Hultz; Jones & Lush; Joseph; Journ. Hered.; Kalkus; King; Leveck & Buchanan; Lindgren; McWhorter; Marshall, F. R. *et al.*; Matthews; Reed, H. E.; Reimers & Swart; Ritzman; Russell; Shaw & Heller; Smith; Spencer; Spencer *et al.*; Spillman; Texas Agric. Exp. Sta.; Tomhave & McDonald; U.S. Sheep Exp. Sta.; Vaughan, Joseph & Vinke; Warwick & Bell; Wilson, F. W.; Wilson, F. W. & Vinson; Wilson, J. F.; Wool Investigations; Young
- Cross-breeding.** *See under Genetics*
- Ecology**—A. Barker, 1927; Nichols, 1928
- Climate*—Adametz, 1911; Amschler; Barkley; Wilsdorf, 1927
- Pasture*—Elliot; Joseph, 1926
- Range Conditions*—Hill, 1921; Joseph, 1928; Journal of Heredity; Lindgren; Lush & Jones, 1923; Spencer, *et al.*
- Endocrines.** *See under Physiology*
- Feeding.** *See under Physiology*
- Fleece Characters**—Bailey & Engeldow; Bessel; Bohm; Burns, 1927; Constantinescu & Contescu, 1928; Darlow & Craft; Duerden, 1926; Duerden & Ritchie, 1927; Duerden & Seale; Frölich, 1926, 1927; Golf, 1921; Herbst; Heymons *et al.*; Hill & Dadisman; Ivanov & Belehov; King; Kronacher, 1924; Kronacher & Schäper; Landauer, 1925; Macalik, 1924; McMurtrie; Mark; Nathusius. W., 1864, 1866, 1886; Roberts, 1928; Völtz, 1921; Wolff; Wool Investigations; Zorn, 1919
- Breed Analysis**—Adametz, 1927; Alfonso; A. Barker, 1922, 1924, 1927; Becker; Boyd; Burns, 1929; Duerden & Bosman, 1925, 1926; Duerden & Ritchie, 1927; Duerden & Spencer; Frölich, 1927; Guldenpfennig; Hawkesworth; Hill, 1921; Hultz; Jahn; Linnenkohl; Macalik, 1924; Macha; Mager; Meuderscheid; Ogrizek, 1926; Opetz, 1927; Osske; Preising; Schleitzer; Scupin; Spencer *et al.*; Spöttel & Tanzer, 1923; Tanzer; Völtz & Jantzon; Vornekahl; Wilson, J. F., 1929; Wiswesser
- Wool Types**—Barker, 1924, 1927; Dylkin; Frölich, 1927; Gehrke; Guldenpfennig; Hawkesworth; Heymons *et al.*; Hill, 1921; Joseph, 1928; Kenningham; Kirsch, 1927; Koeppern; Kuleshov & Vassilief; Lilienthal, 1922; Marshall, 1920; Neumann; Rozanov; Schlange, 1914; Smith; Tanzer, 1928; H. Thilo, 1914; Wolff
- Crimp*—Burns, 1927; Nathusius, W., 1880; Reimers & Swart; Völtz, 1921
- Curl*—Adametz, 1911, 1917; Davenport; Heidenreich; Middeldorf; Nivoc, 1925; O'Brien; Pfeifer; Tänzer, 1925, 1928
- Defects*—Gärtner, 1924; Herre, 1924, 1925; Roberts, 1926; Sturm, 1925
- Density*—Burns, 1925, 1926; McWhorter; U.S. Experiment Sheep Station, 1926
- Evolution*—Duerden, 1927; Duerden & Seale, 1927
- Face-covering*—Arkell; Ritzmann, 1928; U.S. Sheep Experiment Station; Wriedt, 1924
- Fineness*—Adametz, 1918; Bailey; Berndt, 1925; Burns, 1925; Dippe; Dylkin; Gärtner, 1924, 1925; Hardy & Tennyson; Krauter; Kronacher & Schäper, 1926; McWhorter; Macalik, 1924; Mansfeld; Meyer; Odaisky; Ogrizek, 1927; Podoba; Probst; Reichel; Reimers & Swart; Roberts, 1927; Schmidt; Spöttel, 1923, 1924, 1925, 1926, 1929; Ulmanky; U.S. Sheep Exp. Sta., 1925, 1926; Volkmann; Völtz, 1921; Wessler; Zeissner
- Growth*—Burns, 1925, 1927; Hackedorn & Sotola; Hardy & Tennyson; Shadow; Zuntz, 1920
- Inheritance*—Adametz, 1917, 1918; Arkell, 1912; Bailey; Barker, 1925; Belchov, 1928; Berndt, 1925; Burns, 1924; Kronacher, 1925; Landauer, 1926, 1929; Macalik; Middeldorf; Möller; Spöttel, 1923, 1925; Spöttel & Tänzer, 1922; Terho; Ulmanky; Völtz, 1922; Wriedt, 1925
- Kemp*—Bliss; Blyth, 1923; Duerden, 1926; Duerden & Ritchie, 1924; Hardy, 1927; Roberts, 1926; Whyte
- Length*—Aima & Purlevsky; Berndt, 1925; Gärtner, 1924, 1925; McWhorter, 1921; Nivoc, 1925; Tanzer, 1927; Vaughan, Joseph & Vinke, 1927; Volkmann; U.S. Sheep Experiment Station, 1925, 1926
- Strength and Elasticity*—Constantinescu & Contescu, 1926; Dimitriadis; Hardy, 1918; 1920; Hill, 1910, 1911; Kuhler; Möller; Ogrizek, 1926, 1927; Rozanov
- Uniformity*—Mansfeld; Spöttel, 1927, 1929; Weiler
- Weight*—Aima & Purlevsky; Gärtner, 1924; Gärtner & Volkmann; Hill, 1921; Lush & Jones, 1923, 1924; McWhorter, 1921; Nichols, 1928; Spencer; Texas Agric. Exp. Sta.; U.S. Sheep Exp. Sta., 1925, 1926;

- Vaughan, Joseph & Vinke, 1927; Wilson, J., 1928; Wilson, J. F., 1928
- Yield*—Berndt, 1928; Bobbert; Pieritz; Zuntz, 1919
- Flock Analysis**—Buhler; Schultz; Sellentin
- Blackhead Mutton*—Heyne, 1927; Opetz, 1925
- Disley Merino*—Osske; Schönfeld
- Edelwoll* ("Improved Wool")—Scupin
- Hampshire Down*—Meyer
- Karakul*—Frölich, 1928; Ministerio de Agricultura
- Mele*—Kronacher, 1924
- Merino*—Dimitriadis; Elbe, 1925
- Mutton Merino*—Altenkirch; Bautzmann; Böttel; Dippe; Findeisen; Frühauf; Gantzer; Heise; Heydenreich; Kliesch; Kronacher; Maurer; Meuderscheid; Ohly; Paalzow; Pank; Thiemann; Wetzer; Zeissner; Zuntz
- Mutton-and-Wool*—Berndt, 1925; Heinchen; Schönfeld; Schulte
- Negretti*—Kleine-Stricker
- Rambouillet*—Hilsont
- Oxford Down*—Birnbach
- Rhön*—Meiss
- Shropshire*—Wilsdorf, 1927
- Turkish Breeds*—Hüssein
- Zigaya, White*—Schmidt
- Genetics**—A. Barker, 1925, 1927; Berndt, 1925; Darlow, Henseller; Hink; Landauer, 1926, 1929; Nathusius, H. Pucci; Roberts & Crew
- Breed Characterisation*—Bessel; Elkes; Hoffmann; Hosang; Landauer, 1925; Macalik, 1910; Petroff; Walther; Zorn, 1919
- Breeding Methods*—Davydov *et al.*; Hamond *et al.*; Heerden; Thilo, 1924; Vaughan, Joseph & Vinke, 1927; Völtz, 1921
- Breeding Experiments*—Arkell, British Research Association; Carlyle & McConnell; Henseler; Horlacher & Good; Reed; Roberts; Russell; Whyte; Wilson
- Cross-Breeding*. See also **Breeds**: *Half-bred, Mele*. Adametz, 1917; Artmann; Belehov & Reinbot; Burns, 1924; Davy; Duck; Elwes, 1913; Ewart, 1919; Guidentpennig; Heindenreich; Ivanov, 1928; Ivanov & Belehov; Kirsch, 1927, 1929; Kuleshov & Vassiliev; Lee; Marshall, 1920; Matthews; Möller; Ogrizek, 1927; Richter; Roberts, 1926; Rodiczky; Scholz; Shurman; Tänzer, 1927; Tomhave & McDonald; Völtz, 1922; Wallace, 1915-1916
- Colour*. See **Colour**
- Fleece characters*. See under **Fleece Characters, Inheritance**
- Hybrids**—Anonymous, 1919; Galbusera; Jones & Lush; Spillman
- Improvement**—Casseli; Jones & Lush; Kirsch, 1927; Lindgren; Lohner; Pazzini; Schlange, 1917, 1919; Ulmansky; Wilson, F. & Vinson
- Judging**—Anonymous, 1927; Golf, 1921; Hill, 1921; Lohner; Lossen; Mehnert; Spöttel, 1926; Telschow; Vaughan, Joseph & Vinke; Völtz, 1920; Zollikoffer
- Microscopic Structure**—A. Barker, 1927; S. G. Barker; Blyth, 1923, 1926; Bowman; Cecalov; Cockayne; Crew, 1921; Crew & Blyth, 1922, 1923; Dylkin, 1928; Elkes; Elsner; Gärtner & Heindenreich; Hausmann, 1920, 1924; Hoffmann; Kereszturi; Kronacher & Saxinger, 1926; Macalik, 1910; Nathusius, W. 1866, 1886; Pank; Petroff; Podoba; Pfeifer; Saxinger, Sticker; Teodoreanu; Walther; Wilson, J. 1929
- Monographs**—Bohm; Bowman; Fröhlich; Spöttel & Tänzer; Hawkesworth; Heyne, 1924; Horlacher; Leveck & Buchanan; Lydekker; May; Nathusius, H.; Roberts & Crew; Seymour-Jones; Youatt
- Pasture**. See **Ecology**
- Performance**—Berndt, 1925; Dinkhauser; Gärtner & Heidenreich; Herre; Lilienthal, 1921; Vetter; Wilsdorf, 1927; Zorn, 1919; Zorn & Gärtner
- Physiology**—Erdt
- Age*—Macha; Spöttel, 1925; U.S. Sheep Exp. Sta., 1925 and 1926; Voshchinsky, 1925
- Castration*—Agnoletti
- Cholestrol Content*—Eckstein
- Endocrines*—Klein. *Pineal*—Demel. *Thyroid*—Agnoletti; Kalkus; Klein; Simpson, 1922, 1924; Spöttel, 1929
- Feeding*—Joseph. *Albumen*—Knoblich. *Ovagsolan*—Golf, 1922; Helldorf; Lehmann, 1921
- Grafting, Testis*—Balozet; Kronacher *et al.*; Marshall, F. H. A. *et al.*; Moussu; Pardubsky; Polovozova; Runge; Velu & Balozet, 1929; Voronoff
- Milk, Fat Content of*—Macalik, 1924
- Sulphur, Utilisation of*—Marston & Robertson
- Range Conditions**. See under **Ecology**
- Shearing**—Ebbinghaus; Falck & Golf, 1922; Lehmann, 1909; Texas Agric. Exp. Sta., 1929

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